

TITLE

PULSE-TYPE GAS CONCENTRATION MEASUREMENT SYSTEM AND METHOD THEREOF

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a pulse-type gas concentration measurement system and a method for pulse-type concentration measurement for volatile chemical matter in a specific environment.

Brief Discussion of the Related Art

Conventionally, a gas concentration sensor is used for obtaining the concentration of a specific gas. An example of a conventional gas concentration sensor 500 is described in detail with reference to FIG. 1A and FIG. 1B.

The conventional gas concentration sensor 500, as shown in FIG. 1A, has a body 510, voltage input elements 520, and output elements 530. The body 510, as shown in FIG. 1B, has a substrate 512, electrodes 514, a sensing element 516, and a heater 518. Generally, the sensing element 516 is a metallic oxide membrane, such as a tin dioxide (SnO_2) membrane, which reacts to a specific gas in the vicinity of the gas concentration sensor 500. When the conventional gas concentration sensor 500 is applied in a specific environment to measure gas concentration, a fixed voltage is input to the sensor 500 through the voltage input element 520 to activate the heater 518, to heat the membrane of the sensing element 516 to a predetermined temperature, such as 400°C. Thus, the membrane of the sensing element 516 reacts to the specific gas to be measured in the specific environment, and the resistance of the sensing element 516 changes due to the reaction. An outgoing voltage, determined by the resistance of the sensing element 516, is then obtained by the output element 530 as an outgoing signal.

It is obvious that the concentration of the specific gas in the specific environment affects the reaction, and the relation between the concentration of the specific gas and the resistance of the sensing element 516 can be established by experiment as a reference for the gas concentration sensor 500.

FIG. 2A is a chart showing an example of gas concentration measurement using the conventional gas concentration sensor 500, in which the curves L1 and L2 respectively refer to different concentrations of the specific gas. When the voltage is input to the sensor